



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8, MONTANA OFFICE
FEDERAL BUILDING, 10 West 15th St, Suite 3200
HELENA, MONTANA 59626

Ref: 8MO

November 1, 2011

Gallatin National Forest
Lonesome Wood Vegetation Management 2
Attn: Teri Seth, Team Leader
Bozeman Ranger District
3710 Fallon St., Suite C
Bozeman, Montana 59718

Re: CEQ 20110317; EPA Comments on Lonesome Wood
Vegetation Management 2 Draft EIS

Dear Ms. Seth:

The Environmental Protection Agency (EPA) Region VIII Montana Office has reviewed the Draft Environmental Impact Statement (DEIS) for the Gallatin National Forest's Lonesome Wood Vegetation Management 2 Project in accordance with EPA's responsibilities under Section 102(2)(C) of the National Environmental Policy Act (NEPA), 42 U.S.C. Section 4321 *et seq.*, and Section 309 of the Clean Air Act, 42 U.S.C., Section 7609. Section 309 of the Clean Air Act directs EPA to review and comment in writing on the environmental impacts of any major Federal agency action. EPA's comments include a rating of both the environmental impact of the proposed action and the adequacy of the NEPA document.

The DEIS presents no action and two action alternatives for vegetation management activities to reduce fuels within the wildland urban interface (WUI), increase firefighter and public safety, and reinvigorate aspen forest along the west shore of Hebgen Lake. The project area located about 12 air miles west of West Yellowstone, Montana. The preferred alternative includes approximately 2,575 acres of timber harvest and thinning and 325 acres of small tree slashing followed by prescribed burning, and approximately 6 miles of construction of temporary roads. Approximately 370 acres of proposed treatments are in the Lionhead Inventoried Roadless Area (IRA).

The EPA has only a few environmental concerns with the proposed Lonesome Wood Vegetation Management 2 project. The DEIS indicates that the Hebgen Lake area has in the past been extensively roaded for forest management and removal of forest products, and numerous roads and road systems are within the project area, so an increase in forest roads in the area, even temporary roads may, therefore, be an important factor in evaluating potential environmental effects. Alternative 2, the preferred alternative, proposes construction of 6 miles of new temporary road, and Alternative 3 proposes construction of 5 miles of temporary road. It is not clear to us if all practicable efforts have been made to minimize new road construction. We generally encourage minimization of new road construction to

minimize potential adverse environmental effects associated with roads, although we also recognize the need for road access for conduct of vegetation management activities. Have all practicable efforts been made to minimize construction of new temporary roads?

Also, the scale of the Figure 12 and 13 maps of alternatives in the DEIS make it difficult to clearly discern the location of proposed temporary roads in relation to streams and wetlands and other environmentally sensitive areas. We recommend that the location of proposed and necessary temporary roads in relation to streams and wetlands and other environmentally sensitive areas be more clearly presented and/or discussed in the FEIS. Information about proposed construction of roads is important, since forest roads are often the major anthropogenic source of sediment that adversely affect hydrology, water quality and fisheries of streams in National Forests, and roads can also fragment wildlife habitat and reduce wildlife security, and promote spread of weeds.

The DEIS predicts that areas of erosion and sediment delivery within the Lonesome Wood Vegetation Management 2 project are expected to be minor with only slightly elevated sediment contributions to Trapper, Rumbaugh, Cherry, and West Denny Creeks from vegetation treatments in Alternative 2, and Alternative 3 sediment levels would be slightly less due to fewer acres treated and fewer roads. The DEIS further states that the cumulative effects of Lonesome Wood project coupled with decommissioning 3.0 miles of road in the headwaters of Trapper Creek along with the replacement of the lower Trapper Creek culvert would reduce sediment delivery. We agree with the DEIS conclusion that the preferred alternative appears to be in compliance with the Clean Water Act, Montana Water Quality Act and Administrative Rules of Montana, and Gallatin NF Forest Plan direction for water quality protection and Forest sediment guidelines.

We are particularly pleased that the DEIS predicts no change in sediment levels for Watkins Creek. This is important since Montana's 2010 Clean Water Act Section 303(d) list of water quality impaired waterbodies includes Watkins Creek, indicating that the creek does not support aquatic life, cold water fishery and primary contact recreation uses. Low streamflow alterations and physical substrate habitat alterations are listed among the probable causes of beneficial use impairment. We appreciate the efforts of the Gallatin National Forest to address Watkins Creek water quality impairments (e.g., grazing allotment improvements in 2012 are stated to "virtually eliminate livestock sediment issues from Watkins Creek" and/or eliminate 0.02 tons of sediment per year in Watkins Creek; Watkins Creek culvert on FS Road 167 will be replaced with a bridge, and the Watkins Creek and Wally McClure Creek Roads/Trails will be closed in 2011).

We are also pleased that the treatment prescriptions in riparian areas would include a 15 foot no cut buffer, which is a higher level of protection than required by the Montana Streamside Management Zone (SMZ) rules, although we believe an even wider streamside buffer would provide a greater degree of protection to riparian and stream resources during floods and other periodic high flow events. We believe it is likely that the fisheries biologist may need to use his discretion to widen the 15 foot no cut zone to insure stream bank stability in a situation where 15 feet is deemed inadequate.

We also note that proposed vegetative treatments in the Lionhead IRA appear to pose only minor effects to the roadless character of the IRA, and thinning of trees in IRA areas near the WUI will reduce

wildfire risks to private homes and recreational residences, and reduce adverse effects in the event of a wildfire. Accordingly EPA has no objections to such treatments. Hopefully treatments within the IRA would result in a variety of tree age classes and stand density and composition on the landscape that could mimic the mosaic patterns created by wildfire, which may help restore some of the natural quality of these areas within the IRA.

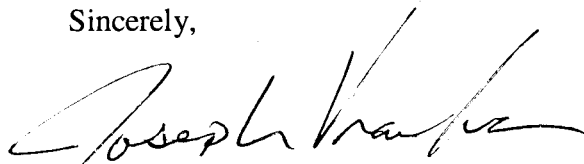
Finally we note that 495 acres of old growth is proposed for thinning treatments and harvests in timber compartment 710, since old growth is currently 43% in that compartment, but would be reduced to 39% by proposed harvests in Alternative 2. It is not clear to us, however, if larger old growth trees are proposed for harvest in timber compartment 710 or if just thinning of smaller trees would take place. This should be clarified.

We support thinning of understory or under burning in old growth to reduce fuel loads and ladder fuels in old growth, since such treatments may lessen the threat of stand removal by a wildfire and reduce competition with other vegetation to promote larger diameter trees. However, we encourage retention of large old growth trees, since they are generally long-lived and fire resistant, and provide important wildlife habitat. While a reduction of old growth from 43% to 39% in timber compartment 710 does not seem like much, old growth has been lost in so many other areas and old growth is often only protected on National Forest and in National Parks. We do not support unnecessary harvest of large, old growth trees, and loss of their ecological and wildlife habitat values.

The EPA's further discussion and more detailed questions, comments, and concerns regarding the analysis, documentation, or potential environmental impacts of the Lonesome Wood Vegetation Management 2 Project DEIS are included in the enclosure with this letter. Based on the procedures EPA uses to evaluate the adequacy of the information and the potential environmental impacts of the proposed action and alternatives in an EIS, the DEIS has been rated as Category LO (Lack of Objections), although there are opportunities to reduce project environmental effects and to improve mitigation measures with no more than minor changes to the proposal. A copy of EPA's rating criteria is attached.

The EPA appreciates the opportunity to review and comment on the DEIS. If we may provide further explanation of our comments please contact Mr. Steve Potts of my staff in Helena at 406-457-5022 or in Missoula at 406-329-3313 or via e-mail at potts.stephen@epa.gov. Thank you for your consideration.

Sincerely,



for Julie A. DalSoglio
Director
Montana Office

Enclosures

cc: Suzanne Bohan/Judy Roos, EPA 8EPR-N, Denver
Dean Yashan/Robert Ray/Mark Kelley, MDEQ, Helena

EPA COMMENTS ON THE LONESOME WOOD VEGETATION MANAGEMENT 2 PROJECT DEIS

Brief Project Overview:

The Hebgen Lake Ranger District of the Gallatin National Forest (GNF) proposes to reduce fuels within the wildland urban interface (WUI), increase firefighter and public safety, reduce wildland fire risks to both private and Forest Service properties in the WUI, including evacuation routes along the Hebgen Lake Road (FSR #167), and reinvigorate aspen forest along the west shore of Hebgen Lake. The project area is located about 12 air miles west of West Yellowstone, MT, and includes many private residences, 34 summer homes, three heavily used camp-grounds, and several dispersed campsites. The primary access road is 18 miles long; starting as a two-lane road off of Hwy 20 then tapering to a narrow dead end. Three alternatives were analyzed in detail.

Alternative 1 – The No Action Alternative, in which the project area would have no fuels reduction or aspen reinvigoration. The area would be subject to natural or ongoing changes only.

Alternative 2 – The Proposed Action is designed to reduce the wildland fire risk to life and property in the WUI and evacuation routes and to reinvigorate aspen forest. The proposal includes approximately 1,750 acres of thinning of all size classes and 825 acres of thinning of small trees (6 inches or less diameter) and 325 acres of small tree slashing followed by prescribed burning. The treatment units proposed within the WUI extend approximately ½ mile from structures. Approximately 6 miles of temporary road construction would be constructed. Treatment units addressing evacuation routes are limited to approximately 400 feet either side of the roadway. Approximately 370 acres of proposed treatments, designed to restore ecosystem composition and structure by removing generally small diameter trees, are in the Lionhead Inventoried Roadless Area (IRA). Approximately 295 acres of IRA thinning is focused on ladder fuels, generally less than six inches in diameter; another 25 acres is proposed for prescribed burning with some slashing of small trees as a pre-treatment; and about 50 acres is proposed for mechanical thinning of generally small diameter trees. No temporary or permanent roads are proposed in the IRA, and treatments adhere to IRA direction Alternative 2 is the preferred alternative. Project work would be completed within 6-10 years after a decision.

Alternative 3 –Mitigated Alternative is designed to address the same goals as Alternative 2 with the reconfiguration and reduction of acres treated designed to reduce impacts to moose winter habitat. Approximately 1,500 acres of thinning of all size classes and 750 acres of thinning of small trees is proposed, along with the same 325 acres of small tree slashing followed by prescribed burning as Alternative 2. Approximately 5 miles of temporary road construction would be constructed. Portions of units 6, 7, 10, 11 and all of unit 12 (approximately 125 acres), areas of moose winter habitat within evacuation routes would be dropped from treatment.

Six additional alternatives were also considered but not evaluated in detail, including an alternative limited to prescribed burning; alternatives that without temporary roads or fuel breaks; two alternatives with larger or smaller evacuation route areas; and an alternative with no logging in the Lionhead IRA.

Comments:

1. We appreciate the inclusion of clear narrative discussions describing alternatives in the DEIS, as well as the tables including information on alternatives; discussion of mitigation common to the action alternatives; Table 1 comparing alternatives; and Figures 12 and 13 providing maps of action alternatives. We also appreciate inclusion of the Appendix A, implementation information, and Appendix B, BMPs for soil and water protection. The narrative, alternatives tables, comparison table, maps, and appendices facilitate improved project understanding, help define issues, and assist in evaluation of alternatives providing a clearer basis of choice among options for the decisionmaker and the public in accordance with the goals of NEPA.

Roads

2. Alternative 2, the preferred alternative, proposes construction of 6 miles of new temporary road, and Alternative 3 proposes construction of 5 miles of temporary road (Table 1). However, we could not clearly discern from the details in Table 1 or from the maps showing the action alternatives (Figures 12 and 13) clearly where the 1 mile of road in Alternative 2 would be deleted with Alternative 3. In Chapter 3 it is stated that temporary road construction has been reduced from 2,500 feet in Alternative 2 to approximately 350 feet in Alternative 3, and that in Alternative 2 there are no temporary roads allocated to 21B (page 209); and that Alternative 3 includes fewer temporary roads and landing roads and no roads in units 1-7 (page 267). Does this Chapter 3 discussion on pages 209 and 267 fully describe the differences in construction of temporary roads between Alternative 2 and Alternative 3? We recommend that the Chapter 2 description of alternatives more clearly present differences in proposed construction of temporary roads between the action alternatives to facilitate improved public understanding of the road differences (e.g., include information on pages 209 and 267 in the Chapter 2 alternative descriptions).

We consider information about proposed construction of roads to be particularly important, since forest roads are often the major anthropogenic source of sediment that adversely affect hydrology, water quality, and fisheries of streams in National Forests. Roads can also fragment wildlife habitat and reduce wildlife security, and promote spread of weeds. The DEIS states that the Hebgen Lake area has in the past been extensively roaded primarily for forest management and removal of forest products, and numerous roads and road systems fall within the project area (page 219). An increase in forest roads in the area, even temporary roads, may therefore, be an important factor in understanding and evaluating potential environmental effects.

3. It is important to clearly disclose the locations of proposed temporary roads relative to the locations of environmentally sensitive areas such as streams and wetlands and/or highly erosive areas or areas of potential mass failure, important wildlife habitat areas, etc.. The scale of the Figure 12 and 13 maps of alternatives make it difficult to clearly discern the location of proposed temporary roads in relation to streams and wetlands and other environmentally sensitive areas. We recommend that the location of proposed temporary roads in relation to streams and wetlands and other environmentally sensitive areas be more clearly presented and/or discussed in the

FEIS.

Have all practicable efforts been made to locate temporary roads in areas that avoid impacts to streams and wetlands, as well as erosive areas and/or geologically unstable areas? How many new road stream crossings would occur with the 6 miles of new temporary roads proposed with the preferred alternative? Will all existing and new road culverts be adequately sized to pass flood flows, bedload and debris, and provide fish passage?

We are pleased that culvert replacement is being considered for Watkins Creek, and Trapper Creek culvert on the Hebgen Lake Road was replaced in 2009 (page 68), and that the Watkins Creek culvert on FS Road 167 will be replaced with a bridge (page 146). We support replacement of culverts with bridges wherever possible since bridges usually provide greater capacity for passing flood flows, bedload, and flood borne debris, and also allow fish, amphibians and small mammals greater opportunity to migrate.

4. We generally encourage minimization of new road construction to minimize potential adverse environmental effects associated with roads, although we also recognize the need for road access for conduct of vegetation management activities. Have all practicable efforts been made to minimize construction of new temporary roads?

It is also important to properly maintain forest roads and assure that appropriate BMPs are implemented on existing and new roads to address road drainage and sediment/erosion control concerns (e.g., installing drainage dips or surface water deflectors, armoring drainage structures, grading and replacement of aggregate to reinforce wet surface areas, ditch construction and cleaning, removing and replacing undersized culverts). Improperly maintained roads can result in increased stream sedimentation and degradation of aquatic habitats. We encourage routine conduct of inspections and evaluations to identify conditions on roads and other anthropogenic sediment sources that may cause or contribute to sediment delivery and stream impairment, and to include activities in the project to correct as many of these conditions and sources as possible. Does the Gallatin National Forest carry out routine road BMP audits or inspections of road conditions on forest roads in the Hebgen Lake area, and properly maintain roads in the project area?

We know that Forest Service funding for road maintenance is limited and is often inadequate. Will adequate funds be available to properly maintain existing and new temporary roads to avoid sediment transport from roads to surface waters? For your information our general recommendations regarding roads are as follows:

- * minimize road construction and reduce road density as much as possible to reduce potential adverse effects to watersheds;
- * locate roads in uplands, away from streams and riparian areas as much as possible;
- * minimize the number of road stream crossings;

- * locate roads away from steep slopes or erosive soils and areas of mass failure;
- * stabilize cut and fill slopes;
- * provide for adequate road drainage and control of surface erosion with measures such as adequate numbers of waterbars, maintaining crowns on roads, adequate numbers of rolling dips and ditch relief culverts to promote drainage off roads avoid drainage or along roads and avoid interception and routing sediment to streams;
- * consider road effects on stream structure and seasonal and spawning habitats;
- * allow for adequate large woody debris recruitment to streams and riparian buffers near streams;
- * properly size culverts to handle flood events, pass bedload and woody debris, and reduce potential for washout;
- * replace undersized culverts and adjust culverts which are not properly aligned or which present fish passage problems and/or serve as barriers to fish migration;
- * use bridges or open bottom culverts that simulate stream grade and substrate and that provide adequate capacity for flood flows, bedload and woody debris where needed to minimize adverse fisheries effects of road stream crossings.

Blading of unpaved roads in a manner that contributes to road erosion and sediment transport to streams and wetlands should be avoided. It is important that management direction assures that road maintenance (e.g., blading) be focused on reducing road surface erosion and sediment delivery from roads to area streams. Practices of expediently sidecasting graded material over the shoulder and widening shoulders and snow plowing can have adverse effects upon streams, wetlands, and riparian areas that are adjacent to roads.

The DEIS indicates that roads are particularly vulnerable to damage during spring breakup as overly-saturated roadbeds from winter freezing are working to dry out, and this typically occurs on the Gallatin NF between March 30 and June 1, but can vary depending on the severity of the winter and spring weather conditions (page 222). We encourage avoiding road use during spring breakup conditions, and closing roads to log haul during spring break up to reduce rutting of roads that increase road erosion and sediment delivery, and graveling of haul roads. Snow plowing of roads later in winter for log haul should also be avoided to limit runoff created road ruts during late winter thaws that increase road erosion (i.e., ruts channel road runoff along roads increasing erosion and sediment transport).

Forest Service Region 1 provides training for operators of road graders regarding conduct of road maintenance in a manner that protects streams and wetlands, (i.e., Gravel Roads Back to the

Basics). If there are road maintenance needs on unpaved roads adjacent to streams and wetlands we encourage utilization of such training (contact Donna Sheehy, FS R1 Transportation Management Engineer, at 406-329-3312).

We also note that there are training videos available from the Forest Service San Dimas Technology and Development Center for use by the Forest Service and its contractors (e.g., “Forest Roads and the Environment”-an overview of how maintenance can affect watershed condition and fish habitat; “Reading the Traveled Way” -how road conditions create problems and how to identify effective treatments; “Reading Beyond the Traveled Way”-explains considerations of roads vs. natural landscape functions and how to design maintenance to minimize road impacts; “Smoothing and Reshaping the Traveled Way”-step by step process for smoothing and reshaping a road while maintaining crowns and other road slopes; and “Maintaining the Ditch and Surface Cross Drains”-instructions for constructing and maintaining ditches, culverts and surface cross drains).

5. We are pleased that approximately 11 miles of road have been decommissioned in the Henry’s Lake Bear Management Unit; and that approximately 5-10 miles of road and motorized trail will be decommissioned in accordance with the Travel Plan in 2011 or 2012. In addition we are pleased that three miles of roads in upper Trapper Creek area are scheduled and funded to be decommissioned in 2011, and that Watkins Creek and Wally McClure Creek Roads/Trails will be closed in 2011 (page 260).

We support decommissioning of roads, particularly those which cannot be properly maintained and which cause resource damages, since adequate funds are often not available to properly maintain roads, and inadequately maintained roads result in greater adverse effects to water quality and aquatic habitat. We encourage closure/decommissioning of roads near streams, and roads with many stream crossings, since removal of these roads are more likely to have more water quality benefits than closure and decommissioning of roads on upper slopes and ridges. Reductions in road density, especially road stream crossing density, has often been correlated with improved aquatic health.

We also note that lower road densities are often associated with improved wildlife habitat, connectivity and security. In addition, there is often a relationship between higher road density and increased forest use and increased human caused fire occurrences. Reduction in road density, therefore, may also reduce risks of human caused fires, which could be important in an area with high fuels/fire risk and/or wildland/urban interface issues such as the Lonesome Wood project area. Are there additional opportunities for road decommissioning within the project area?

6. We are also pleased that no public motorized use of temporary roads constructed for this project would be allowed, and that all temporary roads constructed for the project would be closed and rehabilitated upon completion of the project (page 49).

Water Resources/Hydrology/Fisheries

7. The DEIS states that no streams in the Lonesome Wood Vegetation Management 2 project area are listed as water quality impaired (i.e., included on Montana's Clean Water Act Section 303(d) list, page 271), although the 2010 Montana 303(d) list indicates that Watkins Creek is water quality impaired and does not support aquatic life, cold water fishery and primary contact recreation uses (<http://cwaic.mt.gov/query.aspx>). This is discussed in the DEIS on page 248 where it states that low flow alterations on Watkins Creek below the National Forest boundary are the cause of beneficial use impairments. While low flows contribute to the problem, substrate habitat alterations are also listed among the probable causes of impairment on the Montana 303(d) listing website. Elevated sediment in stream substrate along with stream channel manipulations, or channel downcutting, that affect aquatic habitat often are associated with substrate habitat alterations. We consider it important, therefore, to minimize project related sediment contributions to Watkins Creek, especially since the DEIS states that historical roading and timber harvesting activity have elevated in-stream sediment concentrations in the project area, and all of the project area provide important spawning habitat to Hebgen Lake and it is well known sediment can adversely affect spawning habitat (page 249).

We are pleased that the DEIS states that no change in sediment levels for Watkins Creek are predicted based on sediment modeling (page 264). We also appreciate Watkins Creek grazing allotment improvements in 2012 that are stated to “virtually eliminate livestock sediment issues from Watkins Creek” (page 256) and/or eliminate 0.02 tons of sediment per year in Watkins Creek (page 262), as well as the previously noted culvert replacement, road closure, and road decommissioning which should reduce road related sediment loads to Watkins Creek.

8. Proposed management activities, including forest thinning with ground based equipment, construction of temporary roads, skid trails, landings, and use of prescribed fire, could all impact water quality by disturbing soils and promoting erosion and sediment transport to streams and other water bodies. We appreciate the WEPP and R1/R4 sediment modeling evaluation for determination of Lonesome Wood Vegetation Management 2 project effects on water quality (pages 256-271).

The DEIS predicts that areas of erosion and sediment delivery within the Lonesome Wood Vegetation Management 2 project are expected to be minor and very localized for Alternative 2 primarily in areas where more intensive storms impact treated areas before revegetation occurs (page 262). Sediment modeling estimates only slightly elevated sediment contributions to Trapper, Rumbaugh, Cherry, and West Denny Creeks from proposed vegetation treatments (and as stated above no change to Watkins Creek), and sediment levels would peak approximately two years after implementation (page 264). The DEIS also states that projected sediment effects are only marginally measurable, too low to pose adverse physical or biological effects, and are projected to decline to or below pre-project levels by 2017. Alternative 3 sediment levels are slightly less than Alternative 2 due to fewer acres treated and fewer roads (page 267).

We are pleased that Montana State BMPs would be augmented by more stringent Gallatin NF SMZ guidelines due to Trout Unlimited Settlement Agreement provisions (page 270); and that all bank-edge trees maintaining stable stream banks and trees leaning toward streams that can provide large woody debris within commercial and non-commercial treatment units will be retained (page 46).

The DEIS indicates that the cumulative effects of Lonesome Wood project coupled with decommissioning 3.0 miles of road in the headwaters of Trapper Creek along with the replacement of the lower Trapper Creek culvert are projected to reduce sediment delivery (page 146). Alternative 3 sediment levels are stated to be slightly less than Alternative 2 due to fewer acres treated and fewer roads, although we note that the tables showing sediment yield estimates between Alternatives 2 and 3 appear to evidence no differences in sediment yields between Alternatives 2 and 3 (pages 263-264, 267-268). We do not doubt that Alternative 3 would have slightly less sediment yield than Alternative 2, although such results do not appear to be evidenced by the R1/R4 model results shown in these tables.

We agree with the DEIS conclusion that the preferred alternative would appear to be in compliance with the Clean Water Act, Montana Water Quality Act and Administrative Rules of Montana, WQLS/TMDL constraints, and with Gallatin NF Forest Plan direction for water quality protection, and well within the Gallatin NF sediment guidelines (page 266).

9. We are pleased that the DEIS also states that water yield effects are much too low for potential changes to be measurable or result in peak flow increase concerns (page 265); and large woody debris has been placed in Watkins Creek, and is being considered on other streams in the area as well (page 68).
10. We are also pleased that spring sources in treatment units that provide domestic water supplies for private and recreation residences would be avoided during ground disturbing activities (skidding or harvesting) to protect these domestic water supply source areas (page 46); and we support the requirement that no surface disturbance would be allowed within 25 feet of pipelines and water distributions systems.
11. Thank you also for stating that all required water quality permits would be acquired by the Gallatin NF prior to any ground disturbance activities for Lonesome Wood Vegetation Management 2 Project, including 124 permits and Nationwide 404 permit compliance validations for stream crossings. We are also pleased that logging road stormwater discharge NPDES permitting requirements for the Lonesome Wood 2 project would be complied with, along with Stormwater Pollution Prevention Plan (SWPPP) requirements (pages 46, 47). We also appreciate the informative discussions regarding road drainage and BMPs including photographs of selected road conditions on pages 252 to 256.

Wetlands and Riparian Areas

12. EPA considers the protection, improvement, and restoration of wetlands and riparian areas to be a high priority. Wetlands and riparian areas increase landscape and species diversity, and are critical to the protection of designated water uses. Executive Order 11990 requires that all Federal Agencies protect wetlands. In addition national wetlands policy has established an interim goal of **No Overall Net Loss of the Nation's remaining wetlands**, and a long-term goal of increasing quantity and quality of the Nation's wetlands resource base. We encourage avoidance of timber harvest in wetland and riparian areas, and no equipment operation or road construction in wetland areas.

The DEIS includes Figure 23 (page 250) showing wetlands in the project area and indicates that the largest concentration of wetlands in the area occurs along the shorelines of Hebgen Reservoir where the South Fork of the Madison River enters the reservoir, and that a large area of freshwater emergent wetlands (willow bottoms) on the South Fork Arm along the SF Madison River extends up to Highway 191. We also appreciate the additional disclosures about project area wetlands (i.e., a secondary area of emergent wetlands extends from the Romsett Summer homes to Cherry Creek Campground (pages 248, 249); Hebgen Reservoir shoreline wetlands – freshwater forested/shrub wetlands- extends from Watkins Creek south to near Spring Creek campground -although this area is not included in any Lonesome Wood 2 treatments; and it is stated that all of the wetlands in the Lonesome Wood 2 project are narrow riverine wetlands along existing road crossings).

We are pleased that the DEIS states that none of the large emergent wetlands are included in any of the Lonesome Wood 2 treatment units (page 248), and that seeps and springs would be avoided in any ground disturbing activities (page 46); none of the shoreline – freshwater forested/shrub wetlands would be disturbed; none of the proposed temporary roads or landings would cross riverine wetlands; and that action alternatives would include wetland avoidance mitigation measures (page 270).

We do recommend that all harvest units be reviewed in the field to determine the presence of wetlands, and that wetlands be identified on the Sale Area Map and flagged on the ground to better assure that timber contractors will be able to avoid them.

13. While we are pleased that the treatment prescriptions in riparian areas would include a 15 foot no cut buffer (pages 252, 292), which is a higher level of protection than required by the Montana Streamside Management Sone (SMZ) rules (page 144), we believe an even wider streamside buffer would provide a greater degree of protection to riparian and stream resources. Wide riparian buffers allow for greater protection of stream-side vegetation that stabilizes streambanks and channels during floods and other periodic high flow events.

We are pleased that the District fisheries biologist would be present when crews are laying out treatment units and marking trees in commercial or non-commercial treatments within riparian areas along streams to ensure adequate riparian and stream protection; and that the fisheries

biologist would be allowed the discretion to widen the 15 foot no cut zone to insure stream bank stability in a situation where 15 feet was deemed inadequate (page 46). We believe it is likely that the fisheries biologist may need to use this discretion to provide for more protective riparian buffer zones.

Monitoring

14. We believe monitoring should be an integral part of land management. The EPA endorses the concept of adaptive management whereby effects of implementation activities are determined through monitoring (i.e., ecological and environmental effects). It is through the iterative process of setting goals and objectives, planning and carrying out projects, monitoring impacts of projects, and feeding back monitoring results to managers so they can make needed adjustments, that adaptive management works. In situations where impacts are uncertain, monitoring programs allow identification of actual impacts, so that adverse impacts may be identified and appropriately mitigated.

The EPA particularly believes that water quality/aquatics monitoring is a necessary and crucial element in identifying and understanding the consequences of one's actions, and for determining effectiveness in BMPs in protecting water quality. The achievement of water quality standards for non-point source activities occurs through the implementation of BMPs. Although BMPs are designed to protect water quality, they need to be monitored to verify their effectiveness. If found ineffective, BMPs need to be revised, and impacts mitigated. We encourage adequate monitoring budgets for conduct of aquatic monitoring to document BMP effectiveness and long-term water quality improvements associated with road BMP work and road decommissioning.

We generally recommend that aquatic monitoring be included in projects, using aquatic monitoring parameters such as channel cross-sections, bank stability, width/depth ratios, riffle stability index, pools, large woody debris, fine sediment, pebble counts, macroinvertebrates, etc.. Biological monitoring can be particularly helpful, since monitoring of the aquatic biological community integrates the effects of pollutant stressors over time and, thus, provides a more holistic measure of impacts than grab samples.

The DEIS states that no water quality monitoring is planned, since anticipated water quality effects are too low to be measured (page 47). We recognize that there are limited resources for water quality monitoring, and water quality impacts from the proposed Lonesome Wood Vegetation Management 2 Project activities appear to be low, so we acknowledge reduced need for water quality monitoring to determine actual aquatic impacts for this project. We also note that there may be PACFISH/INFISH Biological Opinion (PIBO) monitoring sites in the project area that perhaps could be used to help evaluate actual project effects (<http://www.fs.fed.us/biology/fishecology/emp/index.html>). If there are PIBO monitoring sites in the area perhaps they may be considered for their potential to evaluate project water quality effects.

We are pleased that a BMP review is proposed for some of the larger treatment units as well as road treatments using the Montana BMP audit forms augmented by the additional BMPs and required mitigation for the Lonesome Wood Vegetation Management 2 Project decision (pages 46, 47). We believe this BMP review is important since it will help assure that BMPs were properly placed on the ground in regard to both road construction and vegetative treatments.

Soils

15. The DEIS states that proposed road construction, and landings, skid trails and prescribed burns with the Lonesome Wood Vegetation Management 2 Project could potentially cause long term impairment of land productivity and reduced soil quality within treatment units. Potential detrimental soil disturbance created in tractor harvest and possible biomass removal areas are identified as of particular concern (page 185).

Four soil types (soil survey map units 53-3B, 53-1D, 54-1G, and 64-2C) are stated to cover the majority of areas slated for fuels treatments. However, we did not see clear disclosure or discussion of the potential sensitivity or risk for erosion, compaction, or mass wasting for the soil types on which road construction and fuel treatments are proposed. We recommend that information regarding the risk of erosion, compaction, or mass wasting for soil types upon which road construction and mechanical ground based fuel treatments are proposed be more clearly disclosed and/or discussed in the FEIS.

We generally recommend avoidance of road construction and mechanical ground based harvests in areas with high risk of sediment production or erosion potential. We also support use of adequate measures to reduce erosion to assure that all of the harvest units, particularly units with sensitive soils or on landtypes with greater vulnerability of erosion and/or mass wasting include mitigation measures and/or less damaging harvest methods to avoid erosion and other detrimental soil impacts and/or higher levels of sediment production and transport. We recommend use of timber harvest/yarding methods that reduce ground disturbance and sediment production and transport risks when harvesting timber on erosive soils or steep slopes to reduce adverse effects to soil and water quality (skyline cable, helicopter, winter logging, etc.). Although we understand that winter logging has not been proposed in this project in order to avoid adverse impacts to moose and their habitat (page 24). We acknowledge the need for such a trade-off for protection of moose and their habitat.

We are pleased that Gallatin NF has a soil protection strategy to use shallow ripping of temporary roadbeds (6-8" deep), seeding with an appropriate seed mix for site conditions, and then slashing the road bed at approximately 10 to 15 tons/acre (page 201); shallow ripping (6-8") around burn piles and seeding with an appropriate seed mix for site conditions, and slashing landing areas at approximately 10 to 15 tons/acre (page 203); and slashing skid trails at an approximate rate of 10 to 15 tons/acre at the end of the project and adding water bars on steep grades (>15%) prior to timber harvest (page 204). We are also pleased that the DEIS indicates that no treatment units in the proposed project are predicted to exceed the Region 1 detrimental soil disturbance standards (page 216).

Among the mitigation measures we often suggest are: use of existing skid trails wherever possible; restrictions on skidding with tracked machinery in sensitive areas; using slash mats to protect soils; constructing water bars; creating brush sediment traps; adding slash to skid trail surfaces after recontouring and ripping; seeding/planting of forbs, grasses or shrubs to reduce soil erosion and hasten recovery; as well as recontouring, slashing and seeding of temporary roads and log landing areas following use to reduce erosion and adverse impacts to soils.

16. We are also pleased that monitoring of soil disturbance is proposed to validate that excess detrimental soil disturbance does not occur (i.e., initial inspections will be conducted during and shortly after harvesting for early assessment of the level of disturbance created, two years after required soil remediation practices have been implemented, and 5 years after harvesting is complete, pages 200-201).
17. We encourage retention of woody debris on the ground to promote nutrient cycling and maintenance of soil productivity, and provide wildlife habitat and ecological structure and functioning. We are pleased that approximately 15 tons/acre of downed woody debris per Gallatin Forest Plan direction would be left on site, where available, and large diameter pieces would be favored to leave (page 50).

Air Quality

18. The preferred alternative includes understory burning on 320 acres and pile burning from forest thinning on 2,575 acres. The EPA supports judicious and well planned use of prescribed fire to reduce hazardous fuels and restore fire to forest ecosystems, and recognizes and supports the national goal reduce the risk of uncontrolled wildfire in wildland-urban interface areas. Although as is well known, smoke from fire contains air pollutants, including tiny particulates (PM₁₀ and PM_{2.5}) which can cause health problems, especially for people suffering from respiratory illnesses such as asthma or emphysema, or heart problems. PM₁₀ and PM_{2.5} particles are both of concern, although PM_{2.5} is greater concern because it can penetrate into the lungs whereas larger particles (included in the coarse fraction of PM₁₀) deposit in the upper respiratory tract. Particulate concentrations that exceed health standards have been measured downwind from prescribed burns.

It is important that proposed burning activities, when combined with air quality impacts from external sources, do not exceed National Ambient Air Quality Standards (NAAQS); and that smoke not reduce visibility or diminish the appreciation of scenic vistas in the nation's National Parks and Wilderness Areas (identified as mandatory Class I Federal areas). The Clean Air Act requires States to submit State Implementation Plans that, among other things, demonstrate attainment of the NAAQS as well as reasonable progress toward the national visibility goal for, "the prevention of any future, and the remedying of any existing, impairment of visibility in mandatory Class I federal areas which impairment results from man-made air pollution." Actions by Federal Land Managers that lack adequate mitigation of air quality impacts could impede a state's ability to meet Clean Air Act requirements.

The DEIS states that the nearest non-attainment area is Butte for PM₁₀ (104 miles to the northwest), and the nearest Class I area is Yellowstone National Park adjacent to the eastern boundary of the Hebgen basin area. We generally encourage inclusion of a map in the EIS showing the relative locations of Class I areas and any PM₁₀ and PM_{2.5} non-attainment areas that may be affected relative to areas of prescribed burns.

Wind dispersion throughout the entire area is stated to be robust, with no visible inversions or localized concentrations of emissions (page 112), and the area does not develop temperature inversions which trap smoke and reduce smoke dispersion during the spring and fall burning season. It is further stated that emissions dispersion are high due to the mountainous terrain and consistent winds, although the down valley location of Hebgen Reservoir has some potential for concentrations of smoke during temperature inversions that occur most frequently during winter. Up valley winds during daytime and down valley wind (cold air drainage) at night can dominate valley winds more than overall prevailing wind direction on ridge tops (page 113). The project burns would be coordinated with the Montana/Idaho State Airshed Group (<http://www.smoke.org>).

Air quality modeling shows estimated emissions of 36.8 tons of PM_{2.5} for understory burns and 24.0 tons of PM_{2.5} for pile burns for a total of 60.8 tons (page 114). Burning would be implemented over a period of 2-4 years, so any 1 year of emissions would likely not exceed 30 tons. Pile burns would be done in the fall or spring while the broadcast burns would be attempted in the spring but could be done in the fall. Direct effects of the burns include particulate emissions from pile burning and understory burns. Actual concentrations would be about 4 to 10 µg/m³ greater depending on the background concentration of PM_{2.5}.

The DEIS discloses that understory and pile burning associated with the Lonesome Wood Vegetation Management 2 project area may temporarily increase PM_{2.5} levels along residential areas and roads in the westside of Hebgen Reservoir, and smoke may temporarily obscure visibility along Forest Road 167 and around residences and campgrounds (page 111). All burns would disperse to low concentrations beyond 5-10 miles (page 115). Spring broadcast burns would likely occur during a period of more wind dispersion than the fall pile burning, due to longer spring daytime length, and higher mixing heights. The understory and pile burn smoke plume would likely disperse to the north and east of the project area. The PM_{2.5} from burns would not likely be measurable in West Yellowstone since the smoke would tend to disperse to the NE. Some concentration of smoke could occur near the recreational residences and private residences, although most of the pile burning would occur when the residences are not occupied during the spring and fall. These units are constrained to a minimum ambient distances of 0.1 to 0.2 miles to minimize PM_{2.5} exceedances at the residences. Outside of the minimum ambient distances the smoke concentrations are expected to be within NAAQS and State of Montana air quality standards.

We are pleased that the public will be warned about high smoke concentrations and advised not to travel outside of a vehicle or residence during the time of burning (page 115), and that pile burn units would only be burned one unit at a time to avoid cumulative smoke effects between units (page 39), with some burn units requiring multiple days. We recommend public notification

of all proposed burns. We also recommend disclosure that smoke management programs depend on favorable meteorological conditions to disperse smoke, and that despite best efforts to predict favorable conditions, the weather can change causing smoke not to disperse as intended. Even though prescribed burns may be scheduled during periods of favorable meteorological conditions for smoke dispersal, the weather can change causing smoke not to disperse as intended. This can be especially problematic for smoldering pile burns when a period of poor ventilation follows a good ventilation day.

We are pleased that the DEIS states that Lonesome Wood Vegetation Management 2 alternatives would comply with NAAQS, Montana air quality standards and procedural requirements, and Gallatin Forest Plan standards (page 118). However, we recommend that the FEIS include: (1) discussion of appropriate smoke monitoring techniques and mitigation to minimize effects to nearby residents downwind of prescribed burns (including meteorological conditions favorable for mitigated prescribed fire smoke and alternatives to prescribed fire such as mechanical fuel reduction methods); and (2) requirements for the incorporation of the Interagency Prescribed Fire Planning and Implementation Procedures Guide (July 2008, <http://www.nwcg.gov/pms/RxFire/rxfireguide.pdf>) into the site-specific burn plans designed for each prescribed burn conducted under this project.

Climate Change

19. Climate change research indicates that climate is changing, and that the change will accelerate, and that human greenhouse gas (GHG) emissions, primarily carbon dioxide emissions (CO₂), are the main source of accelerated climate change (United Nations Intergovernmental Panel on Climate Change (IPCC) , <http://www.ipcc.ch/>). The Forest Service has developed guidance on consideration of climate change in project-level NEPA documents (see at, http://www.fs.fed.us/emc/nepa/climate_change/includes/cc_nepa_guidance.pdf), that suggests EIS analysis and disclosure of the following:

- The effect of a proposed project on climate change (GHG emissions and carbon cycling). Examples include: short-term GHG emissions and alteration to the carbon cycle caused by hazardous fuels reduction projects, and avoiding large GHG emissions pulses and effects to the carbon cycle by thinning overstocked stands to increase forest resilience and decrease the potential for large scale wildfire.
- The effect of climate change on a proposed project. Examples include: effects of expected shifts in rainfall and temperature patterns on the seed stock selection for reforestation after timber harvest and effects of changed stream hydrographs due to earlier snowmelts.

The Forest Service also has informative guidance on the role of climate change in driving at least some bark beetle outbreaks (<http://www.fs.fed.us/ccrc/topics/bark-beetles.shtml>). Temperature influences everything in a bark beetle's life, from the number of eggs laid by a single female beetle, to the beetles' ability to disperse to new host trees, to individuals' over-winter survival and developmental timing. Elevated temperatures associated with climate change, particularly

when there are consecutive warm years, can speed up reproductive cycles and reduce cold-induced mortality. Shifts in precipitation patterns and associated drought can also influence bark beetle outbreak dynamics by weakening trees and making them more susceptible to bark beetle attacks, o seedlings, and affect the ability of trees to prosper through time, and may have added to stress factors leading or affecting the current bark beetle attacks.

EPA Region 8 suggests a general four step approach to address climate change in NEPA documents that appears consistent with the Forest Service guidance.

- Briefly discuss the link between greenhouse gases (GHGs) and climate change, and the potential impacts of climate change, (see <http://www.epa.gov/climatechange/> , <http://www.fs.fed.us/ccrc/> , <http://www.ipcc.ch/>).
- Describe the capacity of the proposed action to adapt to projected climate change effects, including consideration of future needs.
- Characterize, quantify and disclose the expected annual cumulative emissions of GHGs attributable to the project, using annual CO₂-equivalent as a metric for comparing the different types of GHGs emitted. It is suggested that the project's emissions be described in the context of total GHG emissions at regional, national and global scales (over the lifetime of the project).
- Discuss potential means to mitigate project-related emissions as appropriate pursuant to CEQ regulations (40 CFR Sections 1502.14(f), 1502.16(h), 1508.14).

The Lonesome Wood DEIS discussion of Fire History and Weather Trends (page 5) indicates that the Gallatin NF experienced a substantial increase in wildland fires that escaped initial attack from 1999-2008, and twice as many fires started in the last decade on the Hebgen Lake District as compared to the 1980's and 90's. It also states that the high temperature averages in the 1980s and 90s were 95 degrees Fahrenheit (° F) and in the 2000s were 97° F (with the exception of the summer of 2010); a trend that was also paralleled with decreasing snow pack in winters and warmer winter temperatures that had an influence on fire behavior (i.e., increasing fire activity earlier in the season; wildland fire starts more likely to escape initial attack; and a higher rate of spread, increased flame length and higher fire intensity).

The role of climate change in contributing to forest mortality, increased fuel loading, and increased wildland fire activity from increases in temperatures and pine beetle activity/outbreaks and less precipitation is noted in the DEIS (page 6). The role of climate change in impacting other Forest resources (e.g., aquatics, wildlife, weeds, etc.) are also integrated into several of the Chapter 3 discussions of the affected environmental and environmental consequences in the DEIS.

We appreciate the inclusion of climate change discussions in the document, although we suggest that perhaps inclusion of a separate Climate Change section in Chapter 3 of the DEIS may more prominently display the importance of climate change to the public. However, we are pleased that informative discussions about climate change effects are integrated into so many of the Chapter 3 narrative discussions.

We note that NEPA documents can promote improved public understanding of climate change effects. In regard to vegetation management projects, climate change is an important factor causing vegetative change, and increased forest mortality from beetle outbreaks, and increased fire risks and increased rates of fire spread and severity. It is helpful to promote improved public understanding of such matters.

Forest Vegetation

20. The DEIS discussion of forest vegetation (pages 224 -233) provides valuable information regarding forest structure and composition, disturbance, insects and pathogens. EPA supports vegetative treatments to reduce susceptibility to insect and disease agents and fire risks. We generally favor understory thinning from below, slashing and prescribed fire to address fuels build-up with reduced ecological impacts. We also favor retention of the larger more vigorous trees, particularly trees of desirable tree species whose overall composition may be in decline (e.g., aspen, whitebark pine). We are pleased that whitebark pine would not be affected by proposed actions, since whitebark pine stands are found at higher elevations than the areas being harvested (page 235), and that the project is intended to reinvigorate aspen stands.
21. The DEIS states that no treatments are proposed in old growth in timber compartment 709 since this compartment has only 21% old growth which is below the Forest Standard of 30% old growth (page 244). However 495 acres of old growth is proposed for thinning treatments and harvests in timber compartment 710, since old growth is currently 43% in that compartment, but would be reduced to 39% by proposed harvests in Alternative 2 (page 244). It is not clear to us, however, if larger old growth trees are proposed for harvest in timber compartment 710 or if just thinning of smaller trees would take place. This should be clarified.

We support retention of large old growth trees, since they are generally long-lived and fire resistant, and provide important wildlife habitat. We note that harvest of many live mature trees could potentially increase fire risk, as well as reduce wildlife habitat. If the forest canopy is opened too much by removal of large fire resistant trees it may promote more vigorous growth of underbrush and small diameter trees that would increase fuels and fire risk in subsequent years, contrary to the fire risk reduction purpose and need.

While a reduction of old growth from 43% to 39% does not seem like much, old growth has been lost in so many other areas and is often only protected on National Forest and in National Parks. We do not support unnecessary harvest of large, old growth trees. Old growth stands are ecologically diverse and provide good breeding and feeding habitat for many bird and animal species, which have a preference or dependence on old growth (e.g., barred owl, great gray owl, pileated woodpecker). Much old growth habitat has already been lost, and it is important to prevent continued loss of old growth habitat and promote long-term sustainability of old growth stands, and restore where possible the geographic extent and connectivity of old growth (e.g., using passive and active management-such as avoiding harvest of old growth trees, leaving healthy larger and older seral species trees, thinning and underburning to reduce fuel loads and

ladder fuels in old growth while enhancing old growth characteristics). Often lands outside the forest boundary have not been managed for the late-seral or old growth component, so National Forest lands may need to contribute more to the late-seral component to compensate for the loss of this component on other land ownerships within an ecoregion. We encourage retention of large old growth trees as much as possible, and note that important wildlife habitat value may be lost if such trees are harvested, and we doubt that significant fire reduction risk is associated with harvest of large old growth trees.

We support thinning of understory or under burning in old growth to reduce fuel loads and ladder fuels in old growth, since such treatments may lessen the threat of stand removal by a wildfire and reduce competition with other vegetation to promote larger diameter trees. Careful prescribed burning in old growth stands can reduce fuel loads and fire risk in such stands, and thus, may promote long-term protection and sustainability of old growth stands.

Noxious Weeds

22. Weeds are a great threat to biodiversity and can often out-compete native plants and produce a monoculture that has little or no plant species diversity or benefit to wildlife. Noxious weeds tend to gain a foothold where there is disturbance in the ecosystem, such as road building, logging, livestock grazing or fire activities. We are pleased that the proposed project includes activities to control and manage spread of weeds (pages 40, 149-160).

EPA supports integrated weed management, and recommends weed control measures at the earliest stage of invasion to reduce impacts to native plant communities. Weed prevention is the most cost-effective way to manage and control weeds by avoiding new infestations and spread of weeds, and thus, avoiding the need for subsequent weed treatments. We also encourage tracking of weed infestations, control actions, and effectiveness of control actions in a Forest-level weed database.

While we support weed control, it is important to be aware of potential effects of herbicide use on water quality. Herbicide drift into streams and wetlands could adversely affect aquatic life and wetland functions such as food chain support and habitat for wetland species. Efforts should be made to avoid transport of herbicides into surface waters that could adversely affect fisheries and other water uses. The GNF should assure that herbicides and chemicals used for weed control are applied in a safe manner in accordance with Federal label instructions and restrictions that allow protection and maintenance of water quality standards and ecological integrity, and avoid public health and safety problems. Montana Water Quality Standards {Administrative Rules of Montana (ARM) 17.30.6 and 17.30.7} do not include numerical criteria for aquatic life protection for many herbicides. However, it is important to recognize that research and data requirements necessary to establish numerical aquatic life water quality criteria are very rigorous, and many herbicides and weed control chemicals in use are toxic, even though numerical aquatic life criteria have not been established. The Montana Water Quality Standards include a general narrative standard requiring surface water *“to be free from substances that create concentrations which are toxic or harmful to aquatic life.”*

Some suggestions to reduce potential water quality and fisheries effects from herbicide spraying are to assure that applicators: 1) are certified and fully trained and equipped with appropriate personal protective equipment; 2) apply herbicides according to the label; and 3) herbicide applicators should take precautions during spraying (e.g., applying herbicide only after careful review of weather reports to ensure minimal likelihood of rainfall within 24 hours of spraying; special precautions adjacent to the stream to reduce runoff potential, etc.; 4) no herbicide spraying will occur in streams and wetlands or other aquatic areas (seeps, springs); 5) streams and wetlands in any area to be sprayed be identified and flagged on the ground to assure that herbicide applicators are aware of the location of wetlands, and thus, can avoid spraying in or near wetlands; 6) use treatment methods that target individual noxious weed plants in riparian and wetland areas (depending on the targeted weed species, manual control or hand pulling may be one of the best options for weed control within riparian/wetland areas or close to water).

We also recommend that road ditches leading to intermittent and perennial streams be flagged as no-spray zones and especially not sprayed with picloram based herbicides. Herbicides should be applied at the lowest rate effective in meeting weed control objectives and according to guidelines for protecting public health and the environment. In addition we recommend that weed treatments be coordinated with the Forest botanist to assure protection to sensitive plants, and coordinated with fisheries biologists and wildlife biologists to assure that sensitive fisheries and wildlife habitat areas are protected.

Please also note that there may be additional pesticide use limitations that set forth geographically specific requirements for the protection of endangered or threatened species and their designated critical habitat. This information can be found at <http://www.epa.gov/espp/bulletins.htm> . You may also want to consider use of a more selective herbicide (clopyralid) for use in conifer associated communities to reduce impacts on non-target vegetation. In addition we note that spotted knapweed, which is a prevalent noxious weed species in western Montana, is non-rhizomatous and should be relatively easy to control with lower rates of the most selective low toxicity herbicides.

For your information, the website for EPA information regarding pesticides and herbicides is <http://www.epa.gov/pesticides/> . The National Pesticide Telecommunication Network (NPTN) website at <http://nptn.orst.edu/tech.htm> which operates under a cooperative agreement with EPA and Oregon State University and has a wealth of information on toxicity, mobility, environmental fate on pesticides that may be helpful (phone number 800-858-7378).

23. We believe an effective noxious weed control program should consider restrictions on motorized uses, particularly off-road uses, where necessary. Off-road vehicles travel off-trail, disturbing soil, creating weed seedbeds, and dispersing seeds widely. Weed seeds are often transported by wind and water, animal fur, feathers and feces, but primarily by people. The greatest vector for spread of weeds is through motorized vehicles-cars, trucks, ATVs, motorcycles, and even snowmobiles. Weed seeds are often caught on the vehicle undercarriage in mud and released on the Forest. A single vehicle driven several feet through a knapweed site can acquire up to 2,000

seeds, 200 of which may still be attached after 10 miles of driving (Montana Knapweeds: Identification, Biology and Management, MSU Extension Service). Weed seed dispersal from non-motorized travel is of lesser concern because of fewer places to collect/transport seed, and the dispersal rate and distances along trails are less with non-motorized travel. Restrictions on motorized uses may also be needed after burning and harvest activities until native vegetation is reestablished in the disturbed areas to reduce potential for weed infestation of the disturbed sites.

Threatened and Endangered (T&E) Species

24. The DEIS evaluates and discusses impacts to the threatened grizzly bear and Canada lynx (pages 88-101, 272-282).

Grizzly Bear: Potential effects upon the threatened grizzly bear are discussed in detail (pages 88-101), since grizzly bears are known to regularly occur within and adjacent to the project area (page 89), and the project area lies within the Henry's Lake Bear Management Subunit (BMS) #2. The project area includes high open and total motorized access route densities, and only a few small, scattered pieces of secure habitat; with open motorized access route densities (OMARD) $> 1 \text{ mi/mi}^2$ and total motorized access route densities (TMARD) $> 2 \text{ mi/mi}^2$ that are correlated with less use by grizzly bears (page 92). Under both Alternative 2 and Alternative 3 most project access routes would be constructed in areas where total motorized access route density (TMARD) already exceeds 2 mi/mi^2 . The DEIS states that grizzly bear use is likely already compromised by these high levels of motorized access and human use, so that incremental disturbance effects associated with project activities under Alternatives 2 and 3 would be minor (page 101).

The DEIS also states that effects to grizzly bear would be reduced by closing all temporary roads to public motorized use during implementation, and closing roads after project completion. Nearly all of the temporary project routes would be constructed at least 550 yards from secure habitat to minimize loss of secure habitat under either action alternative (page 94). In addition project activities would be temporary, and of limited duration, and existing gates on FS Road 2544 and Trail 215 would be replaced with permanent barricades to preclude motorized use on these routes. These measures and design specifications under both Alternative 2 and 3, would result in a net decrease in TMARD and an increase in secure habitat for the Henry's Lake #2 BMS. Also, all project workers and administrators would be mandated to properly store attractants, and additional provisions would be made to minimize potential for conflicts with grizzly bears resulting from project activities.

The DEIS concludes that the potential for increased displacement or human-caused mortality of grizzly bears associated with project activities would be very low under either Alternative 2 or 3 (page 95). It is stated that both action alternatives would be in compliance with applicable laws, regulation, policy and Forest Plan direction. In regard to the Endangered Species Act the action alternatives may impact individuals or habitat, but would not likely have adverse effects on grizzly bear populations at the planning unit level (page 101).

Canada Lynx: The DEIS indicates that the threatened Canada lynx have never been observed (tracks or otherwise) within the project area (page 272), although the project area is within the 52,243 acre Henry's Lake Mountains Lynx Analysis Unit (LAU), which includes 48,161 acres of USFS lands and 29,716 acres of potential lynx primary habitat (page 273). The Northern Rockies Lynx Management Direction (NRLMD), includes a provision that fuel reduction treatments within a WUI that reduce snowshoe hare habitat need not be in compliance with certain vegetation standards if less than 6% of the total available potential lynx habitat on the Forest is affected. Since the Gallatin NF has not exceeded this 6% threshold for fuels treatment projects with WUI areas the Lonesome Wood project does not need to meet NRLMD vegetation standards (page 274). The DEIS, therefore, states that Alternative 2 has only a direct effect, and results in about 425 acres treated, and Alternative 3 includes 175 acres treated (page 292).

We recommend that the U.S. Fish & Wildlife Service (USFWS) be consulted in regard to potential impacts to T&E species (i.e., grizzly bear, Canada lynx). If it is found that the finally selected project alternative may adversely affect any T&E species the FEIS should include the associated Biological Opinion or formal concurrence for the following reasons:

- (a) NEPA requires public involvement and full disclosure of all issues upon which a decision is to be made;
- (b) The CEQ Regulations for Implementing the Procedural Provisions of NEPA strongly encourage the integration of NEPA requirements with other environmental review and consultation requirements so that all such procedures run concurrently rather than consecutively (40 CFR 1500.2(c) and 1502.25); and
- (c) The Endangered Species Act (ESA) consultation process can result in the identification of reasonable and prudent alternatives to preclude jeopardy, and mandated reasonable and prudent measures to reduce incidental take. These can affect project implementation.

Since the Biological Assessment and EIS must evaluate the potential impacts on listed species, they can jointly assist in analyzing the effectiveness of alternatives and mitigation measures. If T&E species are subsequently identified in the project area, EPA recommends that the final EIS and Record of Decision not be completed prior to the completion of ESA consultation. If the consultation process is treated as a separate process, the Agencies risk USFWS identification of additional significant impacts, new mitigation measures, or changes to the preferred alternative.

Other Wildlife

25. We also appreciate the DEIS evaluation and discussion regarding impacts to moose, management indicator species (MIS), sensitive species, migratory birds, and other wildlife (pages 102-110, 283-335); and the discussion and evaluation of effects on biodiversity (pages 119-122).

Moose: The DEIS indicates that moose are commonly observed around Hebgen Lake during the

summer months when recreational use of the area is heaviest (page 102). Moose on the east side of the Henry's Lake Mountains utilize a narrow band of limited suitable habitat (lodgepole pine stands with subalpine fir understories, page 24) at the lower elevations along the shoreline of Hebgen Lake during the winter. Approximately 10% of the total estimated winter moose habitat would be thinned under the Alternative 2, and an additional 6% would have an understory thinning treatment (page 107); and a total of about 16% of the estimated moose winter habitat would be impacted by treatment units, which would mainly decrease available moose habitat during deep snow conditions. Approximately 9% of the total estimated winter moose habitat would be treated in Alternative 3 (page 108). Logging activities would be restricted from December 1-May 1 under both action alternatives to avoid disturbance to wintering moose. Alternative 3 would better meet Forest Plan direction for providing forage and cover on moose winter ranges compared to Alternative 2. It appears to us that implementation of Alternative 3 would result in reduced impacts on moose in comparison to Alternative 2, although we defer to the wildlife experts in the Forest Service and Montana Dept. of Fish, Wildlife, & Parks in regard to appropriate levels of impacts on moose and their habitat.

Cavity Species: EPA is interested in retention of adequate snags for cavity nesting birds, since such habitat is often in decline. We are pleased that Forest Plan Amendment #15 has a goal of maintaining sufficient snag habitat components for the needs of cavity nesting birds and other snag dependant species (page 121). We are also pleased that 30 snags per 10 acres greater than 18' and 10 inches DBH, where available would be retained in thinned areas (page 50), and snags would also be left in units with broadcast burning if feasible, and retained within the untreated leave clumps for safety purposes. In Douglas fir and subalpine fir on rocky or shallow soil, 60 replacement trees per 10 acres, and large, broken-topped trees with existing cavities would be favored for retention. Retention of snags would also be favored for areas located away from easy access for firewood cutting; and trees and snags with obvious large nest structures or cavities would be left intact, with immediately surrounding vegetation retained as a buffer.

Bald Eagle: There are two eagle territories in the project area, but no bald eagle nest trees would be removed; no clearcutting (site prep for landings or log decks) would be allowed within 100 meters of a nest tree, and no overstory trees would be removed within 100 meters of any nest tree; project activities would be allowed within 400 meters of an active bald eagle nest from February 1 through August 15 (although vehicle activity on the Hebgen Lake Road is allowed).

Goshawk: A 40 acres no treatment buffer would be maintained around active goshawk trees, and an approximate 420 acre "no activity" from April 15 to August 15 would be implemented as mitigation to protect the Post Fledging Area around the active nest (page 48).

Amphibians: Special design considerations would be used within one mile of known western toad breeding sites to minimize displacement of hibernating toads (page 39).

Roadless Areas

26. The DEIS states that fuel treatments are proposed both within the Lionhead 1-193 Inventoried

Roadless Area (IRA). The DEIS also indicates that much of the Lionhead Roadless area (about 26,000 acres of the 32,000 acre IRA) was recommended for designation as wilderness in the Gallatin Forest Plan in 1987, but that recommended wilderness boundary does not extend east to include the entire IRA, and the eastern edge of the IRA (where the project is located) was not recommended for wilderness designation.

EPA supports protection of roadless areas since they often include the population strongholds and key refugia for listed or proposed species and narrow endemic populations that need to be protected. The DEIS states that proposed fuel reduction activities within units 2, 13, 14 and 15 may affect roadless character (pages 24, 80), but that units 13, 14, and 15 while technically within the 1987 IRA boundary, that area has been harvested and roaded, and no longer retain roadless character (page 83).

Table 9 (page 83) shows proposed treatments within the units in the IRA, which include 220 acres of precommercial thinning in unit 2 (slashing the trees, handpiling and burning the slash on site); 45 acres of slashing and burning in unit 13; 210 acres of mechanical ground based thinning in unit 14; and 75 acres of precommercial thinning in unit 15. Treatments within the IRA are designed to restore ecosystem composition and structure by removing generally small diameter trees. The DEIS states that proposed treatments within unit 2 would minimize the uncharacteristic effects of wildfire proximate to the urban interface by restoring stand conditions and ecosystem function more akin to what would be present if periodic fire had been allowed to burn through these stands (page 83).

Proposed vegetative treatments in the Lionhead IRA appear to pose only minor effects to the roadless character of the IRA, and thinning of trees in IRA areas near the WUI will reduce wildfire risks to private homes and recreational residences, and reduce adverse effects in the event of a wildfire. Accordingly EPA has no objections to such treatments. Hopefully treatments within the IRA would result in a variety of tree age classes and stand density and composition on the landscape that could mimic the mosaic patterns created by wildfire, which may help restore some of the natural quality of these areas within the IRA.

U.S. Environmental Protection Agency Rating System for Draft Environmental Impact Statements

Definitions and Follow-Up Action*

Environmental Impact of the Action

LO - - Lack of Objections: The Environmental Protection Agency (EPA) review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC - - Environmental Concerns: The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce these impacts.

EO - - Environmental Objections: The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no-action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU - - Environmentally Unsatisfactory: The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

Adequacy of the Impact Statement

Category 1 - - Adequate: EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis of data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2 - - Insufficient Information: The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses or discussion should be included in the final EIS.

Category 3 - - Inadequate: EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the National Environmental Policy Act and or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

* From EPA Manual 1640 Policy and Procedures for the Review of Federal Actions Impacting the Environment. February, 1987.

